

Appl. No. 10/719,738
Reply to Final Official Action of March 28, 2007

AMENDMENTS TO THE CLAIMS:

This listing and version of the claims replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A method for compensating stressed pixels on a display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;

displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more predetermined stressed pixels whose brightness is expected to be compensated; and

displaying at least one secondary sub-frame representing at least a part of the video image frame and having the predetermined stressed pixels thereon with predetermined compensating brightness,

wherein the primary and secondary sub-frames are displayed sequentially at a second frequency and combined to produce a single image so that the separation of the two sub-frames is not detectable by a viewer.

2. (Original) The method of claim 1 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.

3. (Original) The method of claim 1 further comprising detecting one or more pixels in the video image frame as the stressed pixels.

Appl. No. 10/719,738
Reply to Final Official Action of March 28, 2007

4. (Previously presented) The method of claim 3 further comprising determining the compensating brightness for each of the stressed pixels.

5. (Previously presented) A method for compensating stressed pixels on a display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;
detecting one or more pixels in the video image frame as one or more stressed pixels;
displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having the stressed pixels whose brightness is expected to be compensated;
determining compensating brightness for each of the stressed pixels;
displaying at least one secondary sub-frame having the predetermined stressed pixels thereon with predetermined compensating brightness, wherein the primary and secondary sub-frames are displayed separately and sequentially at a second frequency so that the separation of the two sub-frames is not detectable by a viewer;
forming the primary and secondary sub-frames based on the determined compensating brightness; and
determining the second frequency based on the determined compensating brightness.

6. (Original) The method of claim 3 wherein the determining further comprises:
providing a database supplying accumulative pixel data for one or more stressed pixels, the accumulative pixel data indicating at least an accumulative brightness of each pixel; and

Appl. No. 10/719,738

Reply to Final Official Action of March 28, 2007

comparing one or more pixels in the video image frame against the database to identify the stressed pixels.

7. (Original) The method of claim 6 further comprises accumulating pixel data in the database with regard to the identified stressed pixel based on the pixel data thereof for displaying the video image frame.

8. (Currently amended) A method for compensating stressed pixels on a light-emitting diode (LED) based display device, the method comprising:

receiving a video data input for displaying a video image frame at a first frequency;

detecting one or more pixels in the video image frame as stressed pixels;

displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more stressed pixels with at least one of whose display parameters being degraded due to an accumulative usage of the LED display device; and

displaying at least one secondary sub-frame representing at least a part of the video image frame and complementing the primary sub-frame and having the detected stressed pixels thereon with the degraded display parameter compensated,

wherein the primary and secondary sub-frames are displayed sequentially at a second frequency and combined to produced a single image so that the video image frame is displayed without making the sequential displaying of the two sub-frames detectable by a viewer.

Appl. No. 10/719,738
Reply to Final Official Action of March 28, 2007

9. (Original) The method of claim 8 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.
10. (Original) The method of claim 8 further comprising determining compensation display data with regard to the degraded parameter for each of the stressed pixels.
11. (Previously presented) A method for compensating stressed pixels on a light-emitting diode (LED) based display device, the method comprising:
- receiving a video data input for displaying a video image frame at a first frequency;
 - detecting one or more pixels in the video image frame as stressed pixels;
 - displaying a primary sub-frame representing at least a part of the video image frame, the primary sub-frame having one or more stressed pixels, at least one of whose display parameters is degraded due to an accumulative usage of the LED display device;
 - determining compensation display data with regard to the degraded parameter for each of the stressed pixels;
 - displaying at least one secondary sub-frame complementing the primary sub-frame and having the detected stressed pixels thereon with the degraded display parameter compensated, wherein the primary and secondary sub-frames are displayed sequentially at a second frequency so that the video image frame is displayed without making the sequential displaying of the two sub-frames detectable by a viewer;
 - forming the primary and secondary sub-frames based on the determined compensation data; and

Appl. No. 10/719,738

Reply to Final Official Action of March 28, 2007

determining the second frequency based on the determined compensation data.

12. (Original) The method of claim 8 wherein the detecting further comprises comparing pixels in the video image frame against a database supplying accumulative display data for one or more stored stressed pixels, the accumulative pixel data indicating at least one display parameter has been degraded.

13. (Original) The method of claim 12 further comprises accumulating the pixel data in the database with regard to the identified stressed pixel according to the displayed primary and secondary sub-frames.

14. (Original) The method of claim 8 wherein the degraded display parameter is a brightness level of the pixel.

15. (Currently amended) A system for compensating stressed pixels on a light-emitting diode (LED) based display device, the system comprising:

means for receiving a video data input for displaying a video image frame at a first frequency;

means for processing information for one or more stressed pixels in the video image frame; and

means for displaying a primary sub-frame and at least one secondary sub-frame sequentially at a second frequency so as to combine the primary and secondary sub-frames to produce a single image so that the secondary sub-frame is not separately detectable by a viewer,

Appl. No. 10/719,738
Reply to Final Official Action of March 28, 2007

wherein the primary sub-frame has one or more stressed pixels with at least one of whose display parameters being degraded due to an accumulative usage of the LED display device, and the secondary sub-frame has the detected stressed pixels thereon with the degraded display parameter compensated.

16. (Original) The system of claim 15 wherein the primary and secondary sub-frames are displayed with the second frequency so that an effective display frequency is equivalent to the first frequency.

17. (Original) The system of claim 15 wherein the means for processing further comprises means for determining compensation display data with regard to the degraded parameter for each of the stressed pixels.

18. (Previously presented) A system for compensating stressed pixels on a light-emitting diode (LED) based display device, the system comprising:

means for receiving a video data input for displaying a video image frame at a first frequency;

means for processing information for one or more stressed pixels in the video image frame, wherein the means for processing comprises means for determining compensation display data with regard to at least one degraded parameter for each of the stressed pixels;

means for displaying a primary sub-frame and at least one secondary sub-frame sequentially at a second frequency so that the sequential displaying of the primary and secondary sub-frames is not detectable by a viewer, wherein the primary sub-frame has the stressed pixels

Appl. No. 10/719,738
Reply to Final Official Action of March 28, 2007

with the display parameters being degraded due to an accumulative usage of the LED display device, and the secondary sub-frame has the detected stressed pixels thereon with the degraded display parameter compensated; and

means for:

forming the primary and secondary sub-frames based on the determined compensation data; and

determining the second frequency based on the determined compensation data.

19. (Original) The system of claim 15 wherein the means for processing further comprises means for comparing pixels in the video image frame against a database supplying accumulative display data for one or more stored stressed pixels, the accumulative pixel data indicating at least one display parameter has been degraded.

20. (Original) The system of claim 15 wherein the means for processing is a video processor or controller with predetermined processing algorithms embedded therein.

21. (New) The method of claim 1, wherein the primary sub-frame comprises one or more predetermined non-stressed pixels, the predetermined stressed pixels have a first level of brightness and the predetermined non-stressed pixels have a second level of brightness, wherein the first level is greater than the second level.

22. (New) The method of claim 1, wherein the primary sub-frame and the secondary sub-frame include different brightnesses.